

ACC NR: A17002996

SOURCE CODE: UR/0413/66/000/024/0098/0099

INVENTORS: Smirnov, V. S.; Lamoko, L. N.; Pogodin, N. M.; Kucherevich, O. V.;
Bublikov, G. P.

ORG: none

TITLE: A four-stroke three-position liquid distributor. Class 47, 189654

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 24, 1966, 98-99

TOPIC TAGS: flow distribution, liquid flow, valve, electromagnetic effect

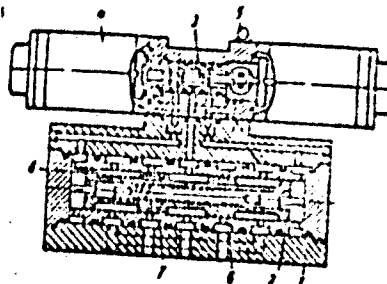
ABSTRACT: This Author Certificate presents a four-stroke three-position liquid distributor with an electromagnetic drive. The distributor contains a casing within which are mounted a distributing and a guiding valve, two driving electromagnets of the pusher type, and a dual manual control (see Fig. 1). To prevent the working liquid from entering the openings of the acting mechanisms after it escapes through the sealing straps of the distributing valve in its neutral position, annular grooves are cut on the central sealing straps of the distributor valve. These grooves are connected through ducts in the body of the valve to the external end surfaces of the central sealing straps.

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UDC: 621.646.657-368

ACC NR: AP70029/6

Fig. 1. 1 - casing; 2 - distributing valve;
3 - guiding valve; 4 - electromagnet;
5 - manual control; 6 - sealing strap;
7 - annular groove; 8 - duct



Orig. art. has: 1 figure.

SUB CODE: 13/ SUBM DATE: 26Oct64

Card 2/2

Automatische Kontrolle An Maschinenteilen (Am Beispiel Von Teilen Für Bergbau Maschinen)
Berlin, Technik, 1953.

55 P. Diagrams., Tables, (Schriftenreihe Des Verlages Technik, Band 77)

Translation From The Russian, Avtomatizatsiya Kontrola Detaley Gornykh Mashin, Moscow,
1951.

"Literaturhinweise": P. 55.

SP: N/5

662.37

.K9

KUCHERKOV, G., polkovnik zapasa, byvshiy komandir polka

Sons of the Guard. Av.i kosm. 44 no.3:73-79 '62. (MIRA 15:3)
(World War, 1939-1945--Aerial operations)

KUCHERKOV, Ye.O.

Significance of the use of morphine in roentgenodiagnosis of
cancer of the stomach. Vop.onk. 6 no.2:16-22 F '60. (MIRA 14:2)
(MORPHINE) (STOMACH—CANCER)

KUCHERKOV, Ye.G.

Method of pneumoperitoneum for the diagnosis and determination
of the operability of cancer of the upper part of the stomach.
Kaz. med. zhur. no.2:18-24 Mr-Apr '62. (MIRA 15:6)

1. Rentgenologicheskoye otdelniye (zav. - prof. Ye.E.
Abarbanel', nauchnyy rukovoditel' - deystvitel'nyy chlen
AMN SSSR prof. A.I. Savitskiy) Onkologicheskogo instituta
imeni P.A. Gertsena.

(STOMACH--CANCER)
(PNEUMOPERITONEUM, ARTIFICIAL)

... (MIRA 18:3)

... (MIRA 18:3)

... (MIRA 18:3)

BLAGOVESHCHENSKIY, A.B.; KUCHERNYUK, V.A.

Thermally stabilized amplifier with a relay characteristic.
Mash. i neft. obor. no. 3:26-28 '64. (MIRA 17:5)

1. Oktyabr'skiy filial Vsesoyuznogo nauchno-issledovatel'skogo
i proyektno-konstruktorskogo instituta kompleksnoy avtomatizatsii
neftyanoy i gazovoy promyshlennosti.

KUCHERNYUK, V.A.

Electronic feed control system for fluids coming from a well.
Mash. i neft. obor. no.6i27-28 '65. (MIRA 18:7)

1. Oktyabr'skiy filial Vsesoyuznogo nauchno-issledovatel'skogo
i proyektno-konstruktor'skogo instituta kompleksnoy avtomatizatsii
neftyanoy i gazovoy promyshlennosti.

SOURCE: Pribery i tekhnika eksperimenta, no. 6, 1964, 65-67

The manufacture and operation of a large-size dispersive
slow neutron are described. The detector is produced
the polymerization of tetraethylsilane in the presence of
T-1 phosphor, which is sensitive to slow neutrons. On completion of
the polymerization process, the detector is machined to the required
dimensions, polished, and fitted in an aluminum container. Measure-
ments with the detector were carried out on a setup consisting of a
scintillation counter unit, a USh-10 broad-band amplifier, and a VSP
scaling unit. A ^{240}Pu source encased in a paraffin sphere served as
the source of slow neutrons. Five detectors were tested in all. In
measurements of the relationship between the counting rate and photo-

... isotope h^{10} . Two types of detectors LDNM-I and LDNM-II

"APPROVED FOR RELEASE: 03/13/2001

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APPROVED FOR RELEASE: 03/13/2001

CIA-RDP86-00513R000827030010-0"

KUCHEROV, A., kapitan

Platoon of rated specialists. Voen.vest. 40 no.2:101 P '61.
(Radio, Military)

KUCHEROV, A. inshener.

Two suggestions submitted by boiler engineer F. Zosulia. Mast. ugl. 4
no. 10:14 0'55. (MLRA 9:1)
(Mine railroads) (Zosulia, F.P.)

KUCHEROV, A.

Regulating the pay system of communication workers. Sots. trud.
4 no.10:70-73 0 '59 (MIRA 13:3)
(Communication and traffic) (Wages)

XXXXXX, 1.1.

Textile Industry and Fabrics

Educational conferences for workers of the knit goods industry. Leg. prom. 12 no. 4, 1952

Monthly List of Russian Accessions, Library of Congress, July 1952. Unclassified.

VIKTOROV, Nikolay Vladimirovich; ~~KUCHEROV~~, A.I., inzhener, nauchnyy redaktor;
KRYUGER, Yu.V., redaktor izdatel'stva; MEL'NICHENKO, F.P., tekhnicheskii redaktor

[Experimental demonstration of the construction of school buildings]
Opytno-pokazatel'noe stroitel'stvo shkol'nykh sdanii. Moskva, Gos.
izd-vo lit-ry po stroit. i arkhitekture, 1956. 46 p. (MLRA 9:8)
(Schoolhouses)

KUCHEROV, A.I., inshener.

**Precast reinforced concrete girders for use in roofs of industrial
buildings. Bet.1 shel.-bet. no.11:389-390 N '56. (MLRA 9:12)
(Girders) (Precast concrete)**

CHEBOTAYEV, A.P.; KHANGALDOV, N.Ya.; KUCHEROV, A.I., inzh., nauchnyy red.;
KRYUGER, Yu.V., red.isd-va; TIKHOMIROVA, T.A., tekhn.red.

[Using coarse porous concrete] Is opyta primeneniia krupno-
poristogo betona. Moskva, Gos.isd-vo lit-ry po stroit.i arkhitekt.,
1957. 52 p. (MIRA 11:1)
(Concrete construction) (Precast concrete)

MARAYSHKOV, G.M., montashnik; RZDRIN, K.B., inzhener; ~~XUCHENOV, A.I.~~
inzhener, nauchnyy redaktor; KRUGER, Yu.V., redaktor izdatel'-
stva; GUSEVA, S.S., tekhnicheskij redaktor

[Large-panel construction of schools] Opyt stroitel'stva krupno-
blochnykh shkol'nykh zdaniy. Moskva, Gos.izd-vo lit-ry po stroit.
i arkhitekt., 1957. 47 p. (MLRA 10:10)
(Schoolhouses)
(Reinforced concrete construction)

BASOV, K.I.; KUCHEROV, A.I.

Combination soluble glass mixtures with improved knockout properties. Sbor. trud. BITM no.22:13-20 '64.

Using quick-hardening mixtures with a soluble glass binder for large, shaped steel castings in conditions of small batch production. Ibid.:29-36

(MIRA 18:6)

KUCHEROV, A.S., inzh.

Use of epoxy resins in condenser repairing. Khol.tekh. 40 no.5:
55 8-0 '63.

Substituting Freon 22 for Freon 12. 55 (MIRA 16:11)

ACC NR: AP7002706

(N)

SOURCE CODE: UR/0115/66/000/012/0045/0047

AUTHOR: Kucherov, A. S.

ORG: none

TITLE: AGC-caused error in measurement of noise factor

SOURCE: Izmeritel'naya tekhnika, no. 12, 1966, 45-47

TOPIC TAGS: radio noise, receiver signal to noise ratio

ABSTRACT: The method of reference oscillator used for measuring noise factor of radio receivers is considered. By using AGC, in this method, both the error due to non-linearity of the amplifier-channel amplitude characteristic and the error due to gain variation can be reduced, and the process of receiver tuning can be simplified. Yet when the AGC is not entirely efficient, an additional error arises which is given

by
$$\Delta M = \frac{2\psi - (\sqrt{M} - 1)}{\left(\frac{\psi}{\sqrt{M}} - 1\right)^2} (\sqrt{M} - 1),$$
 where $\psi = -\frac{K_1}{\lg \alpha}$; M - ratio of noise powers at the

receiver output with noise generator on and off. A set of curves plotted on the basis of this formula permits estimating the additional error from the amplitude characteristic of the test receiver; parameter ψ characterizes AGC efficiency.

Card 1/2

UDC: 621.391.822.088.6

ACC NRAP7002706

Hints for reducing the additional error are given. Orig. art. has: 3 figures and 16 formulas.

SUB CODE: 09 / SUBM DATE: 16Apr65 / ORIG REF: 002

Card 2

L 12018-6/ EWT(1)/EWP(m)/T LJP(c)

ACC NR: AP6001176

SOURCE CODE: UR/0256/65/000/007/0068/0070

AUTHOR: Kucherov, A. S. (Engineer, Major)

ORG: None

TITLE: Gravitation and the prospects of its utilization

SOURCE: Vestnik protivovozdushnoy oborony, no. 7, 1965, 68-70

TOPIC TAGS: gravitation field, graviton, antigravitation, unified field theory, earth gravity

ABSTRACT: The author discusses the problem of studying gravity from the time of Newton to the present, citing in his article the works of J. Weber, the Soviet physicists Braginskiy and Rukman, and the work of Prof. Ivanenko. In the USSR the scientific team of Ivanenko is working on the problem whether gravitational forces should be taken into account when studying atomic particles. Ivanenko recently put forward the hypothesis of the interconversion of ordinary matter and gravitons, and if his group is able to prove this hypothesis empirically this will help to create a unified field theory. The physicists Braginskiy and Rukman suggest that gravitational radiation can be detected by observing large rotating flywheels. At the present stage of development, gravity is a burden to technology since an enormous amount of energy is required to overcome the gravitational forces. Thus the idea of creating antigravitational devices was born. At the first conference of Soviet scientists in Moscow devoted to questions of whether antigravitational devices

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L 12018-66

ACC NR: AP6001176

21,44,55

can be created and whether antigravitation exists, several papers presented stated that antigravitation can exist not only in elementary particles but also in the entire universe. Along with our section of the universe in which the atoms consist of proton-neutron nuclei and electrons revolving around them, antiworlds can exist where positrons and not electrons revolve around the atomic nuclei. Ivanenko hypothesized the existence of an antiworld with negative masses, the presence of gigantic sections of the universe which will contract and not expand like our universe. The latest remarkable experiments in the field of utilizing the forces of gravity was the invention in 1963 of a so-called "perpetual-motion machine" by the Soviet engineer Kuznetsov. It is constructed as follows. Two springs supporting a weight are fastened in a box. They are connected with a lever which moves an indicator along a specially calibrated strip. No fuel is needed for this "machine" since the daily rotation of the earth acts as the fuel. The principle of operation of the "perpetual-motion machine" is explained in the following manner. The sun is at its zenith. Its enormous mass attracts everything that lies on the day side of the planet: stones, machines, etc. When the Earth rotates these objects will be on the night side and thus the relationship of the gravitational forces of the earth and sun will change. First they attracted objects to different sides, now their forces are added. Ordinary scales do not notice these foci of attraction because the weights on the pans of the scales decrease and increase identically. Spring-loaded scales detect the daily change of the weight of the objects. The weight of the load in Kuznetsov's mechanism fluctuates, the spring on which it is suspended first contracts, then stretches. Thus the load performs very little work. During the summer at noon the tip of the indicator is deflected 12 mm downward from the center

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ACC NR: AP6001176

mark and at midnight, 12 mm upward. While Kuznetsov's "perpetual-motion machine" is still a toy, the possibility is not precluded that it is the first of more powerful devices to come which will operate on the forces of gravity. Orig. art. has: 2 figures.

SUB CODE: 03 / SUBM DATE: none

20/

Card

3/3

SMOLIAN, Aleksandr Semenovich; KUCHEROV, A.Ya., red.; TIKHONOVA, I.M.,
tekhn.red.

[Living traditions; past and present of the Okhta Chemical
Combine] Zhivye traditsii; o proshlom i nastoiashchem
Okhtinskogo khimicheskogo kombinata. Lenizdat, 1959. 132 p.
(MIRA 12:6)

(Leningrad--Chemical industries)

ANTONOV, Ye.N.; KUCHEROV, A. Yu.

New method for reconditioning curing chambers. Kauch. i rez. 20 no.1:44-
46 Ja '61. (MIRA 14:3)

1. Voronezhskiy shinnyy zavod.
(Voronezh—Tires, Rubber)(Rubber, Machinery)

Kucherov, B. K.

"Investigation of Oscillations of the Spindles of Variable Cross Section and With
"Wooden Heads." Sub 24 May 51, Moscow Textile Inst.

Dissertations presented for science and engineering degrees in Moscow during
1951.

SO: Sum. No. 400: 9 May 55

КУЧЕРОВ О.К.

SEVOST'YANOV, A.G., kandidat tekhnicheskikh nauk; KUCHEROV, B.K.,
kandidat tekhnicheskikh nauk.

Determining the forces acting on fibers during drawing. Tekst.prom.
14 no.9:16-19 8 '54. (MLRA 7:11)
(Spinning)

HUCHEROV, B.K., Doc Tech Sci--(diss) "Dynamics of ~~the~~ ring-spinning
bobbins ~~spindle~~ for large packing^s with a non-rotating spindle and vibration
~~damper~~^{optimalizer}." Mos, 1953. 15 pp (Min of Higher Education USSR. Mos Textile Inst), 120 copies (ML,22-58,106)

-68-

KUCHEROV, B.K.; MAKHOVA, N.S.

Motion of the wire set in relation to the fabric in the process of
napping. Izv. vys.ucheb.zav.; tekhn.tekst.prom. no.6:130-135 '61.
(MIRA 15:1)

1. Moskovskiy tekstil'nyy institut.
(Textile machinery)

KUCHEROV, B.K.; DZHOLDASBEKOV, U.A.

Kinematics and dynamics of the torsional picking mechanism of looms.
Izv.vys.ucheb.zav.; tekhn.tekst.prom. no.1:143-150 '62.
(MIRA 15:3)

1. Moskovskiy tekstil'nyy institut.
(Looms)

KUCHEROV, B.K.

For a wide use of the operational calculus in machine design.
Izv.vys.ucheb.sav.; tekhn.tekst.prom. no.5:146-147 '62. (MIRA 15:11)

1. Moskovskiy tekstil'nyy institut.
(Calculus, Operational)
(Textile machinery--Design and construction)

KUCHEROV, B.K.; DZHOLDASBEKOV, U.A.

Design of the torsion roller of the picking mechanism for looms.

Inv.vys.ucheb.sav.; tekhn.tekst.prom. no.1:153-156 '63.

(MIRA 16:4)

1. Moskovskiy tekstil'nyy institut.
(Looms)

MAYDAN, Dmitriy Semenovich; KOBEVNIK, Vasil'y Fedorovich;
NESTERENKO, Vladimir Vasil'yevich; ZABOLOTNYI, Ivan
Prokof'yevich; BESKLEPCHENKO, Fedor Markovich; KUCHEROV,
Dmitriy Mikhaylovich; FEYGIN, L.M., otv. red.; BOGOPOL'SKIY,
B.Kh., otv. red.; SILINA, L.A., red.izd-va; MAKSIMOVA, V.V.,
tekhn. red.; BOLDYREVA, Z.A., tekhn. red.

[Mechanization and automation of production processes in
mining] Mekhanizatsiia i avtomatizatsiia proizvodstvennykh
protssosov na rudnikakh. Moskva, Gosgortekhnizdat, 1962. 320 p.

(MIRA 16:2)

(Mining engineering--Equipment and supplies) (Automation)

ACC NR: AP6027123

(A)

SOURCE CODE: UR/0416/66/000/005/0060/0063

AUTHOR: Kucherov, F. (Brigadier General, Technical forces)

ORG: None

TITLE: Organization of military railway transportation

SOURCE: Tyl i snabzheniye sovetskikh vooruzhennykh sil, no. 5, 1966, 60-63

TOPIC TAGS: railway transportation, armed force logistics

ABSTRACT: The activities developed by transportation units in a military district are generally reviewed. An effective cooperation of transportation officers with various railway communist party organizations improved the transportation conditions and decreased general expenditures. It is expected that in 1966 the trunk line in the district will be transferred to diesel power. The initiative and activities of many senior officers are highly praised including the preparation of young officers for responsible positions. Lectures, training exercises and special assignments are regularly conducted in order to attain a higher standard of proficiency. The officers are well trained in using hoisting and conveying equipment for loading operations. Many officers take correspondence courses in the institutes of higher learning. Orig. art. has: 2 photos.

SUB CODE: 15/ SUM DATE: None

Card 1/1

KUCHEROV, G.; LITVINCHUK, V.

Welding guns. IUn.tekh. 2 no.6:74-75 Je '58.
(Electric welding)

(MIRA 11:6)

SOV/178-58-7-18/24

96

AUTHORS: Kucherov, G., Litvinchuk, V.

TITLE: An Electric Soldering Tool for the Radio Amateur
(Elektropayal'nik radiolyubitelya)

PERIODICAL: Voyennyy svyazist, 1958, Nr 7, p 42 (USSR)

ABSTRACT: The authors recommend a soldering tool producing 270-300°C within 2-3 seconds. It consists of a transformer fed from the 220-volt mains. The primary coil consists of 1100 windings of PE-0.45 wire with taps at the 900th and 800th winding, as shown by the circuit diagram. The secondary coil consists of two windings of 2 mm copper wire. The soldering tip, also made of copper wire, is connected by two 5-6 mm copper tubes, 160 mm long, to the secondary winding. The current within the secondary winding is approximately 60 amps at 0.5 volts. Another secondary coil produces 6.5 volts and feeds a small lamp. The authors

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An Electric Soldering Tool for the Radio Amateur

advise switching first to the 800th winding and then continuing the soldering operation with 1100 windings. The device may be built in the shape of a pistol having a wooden or metal housing. There is 1 circuit diagram.

Card 2/2

L 39485-66 EST(1)/ERA(h) GD/GS
 ACC NR: AT6002988 SOURCE CODE: UR/0000/65/000/000/0201/0212
 AUTHOR: Kucherov, G. F.; Maksimova, V. I.
 ORG: none
 TITLE: Ferrite-transistor elements and assemblies of a ¹⁵digital differential analyzer
 SOURCE: Vsesoyuznoye soveshchaniye po magnitnym elementam avtomatiki i vychislitel'noy tekhniki. 9th, Yerevan, 1963. Magnitnyye tsifrovyye elementy (Magnetic digital elements); doklady soveshchaniya. Moscow, Izd-vo Nauka, 1965, 201-212
 TOPIC TAGS: differential analyzer, ferrite transistor element
 ABSTRACT: The development of several ferrite-transistor elements and their combinations intended for digital differential analyzers (DDA) is reported. A 2-element trigger operating on the quality principle is claimed to have these characteristics: permissible supply-voltage (15 v) variation, $\pm 35\%$; pulse frequency, from 1 cps to 200 kc; pulse duration, 2.5-3 μ sec; load, 75-250 ohms; can drive up to 6 ferrite-transistor elements. A pulse shaper has these characteristics:

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ACC NR: AT6002988

permissible voltage variation, $\pm 30\%$; pulse frequency, 1 cps to 50 kc; pulse rise or fall time, under 1 μ sec; pulse duration, 4–20 μ sec; delay, under 1.2 μ sec. A neon-lamp pulse indicator tolerates $\pm 25\%$ voltage variation and can operate at a clock frequency of 10–200 kc. A 2-cycle single-digit adder operates at 175–200 kc with a supply-voltage variation of $\pm 30\%$. Reversible counter and shift register which sum up integrand increments and deliver them digit-by-digit to the above adder operate at clock frequencies of 1 cps to 175 kc with a $\pm 25\%$ of supply-voltage variation. An addressing circuit for functions and independent variables consists of two registers and a decoder, tolerates $\pm 25\%$ voltage variation, and operates at frequencies of 1 cps to 200 kc. An increment ternary coder developed for serial binary DDA permits a $\pm 25\%$ voltage variation and operates at 1 cps to 200 kc. The above equipment is claimed to be stable at temperatures of -10 to $+65^\circ\text{C}$. Orig. art. has: 7 figures.

SUB CODE: 09 / SUBM DATE: 23Apr65 / ORIG REF: 006 / OTH REF: 001 ↘

Cord 2/20/66

KUCHEROV, I.

Movable units for sorting crushed stone. Avt.dor. 22 no.2:24-
25 F '59. (MIRA 12:2)

(Road machinery)

ZHMUDSKIY, A.Z. [Zhmds'kiy, O.Z.]; KUCHEROV, I.; SHYANOVSKIY, V.I.
[Shyanovs'kiy, V.I.]

Recording of X-radiation by means of CdS photovaristors. Ukr.
fiz. zhur. 6 no.2:279-281 Mr-Ap '61. (MIRA 14:6)

1. Kiyevskiy ordena Lenina gosudarstvennyy universitet im. T. G.
Shevchenko.

(X rays)
(Cadmium sulfide)
(Photoelectric cells)

KUCHEROV, I.

Semi-movable gravel sorting equipment. Aut. dor. 27
no.4:27 Ap '64. (MFA 17:9)

KUCHEROV, I. F.

Potatoes

Semi-annual potato harvests. Sad. 1 og. no. 3, 1952.

Monthly List of Russian Accessions. Library of Congress, May, 1952.

Unclassified.

KUCHEROV, I.G.

Sorting unit on a tractor loader. Avt.dor. 20 no.8:30-31
Ag '57. (MIRA 12:4)
(Road machinery)

KUCHEROV, I.G.

Cranes mounted on motor graders. Avt.dor. 22 no.4:21 Ap '59.
(MIRA 12:6)

(Graders (Earthmoving machinery))
(Cranes, derricks, etc.)

GOLIKOV, Valentin Ivanovich; KUCHEROV, Iven Konstantinovich; RESINA,
Zinaida Fedorovna; KHROMTSOV, Mikhail Ivanovich; MOZHAROVSKIY,
S.I., retsenzent; TITKOV, O.O., retsenzent; OBRAZTSOV, S.A.,
red.; STRATILATOVA, K.I., red.izd-vs; PARAKHINA, N.I.,
tekhn.red.

[Lumbering and woodworking technology] Tekhnologiya lesopil'no-
derevoobrabatyvayushchego proizvodstva. Moskva, Goslesbumizdat,
1960. 383 p. (MIRA 14:4)

(Woodworking industries)

(Lumbering)

USSR/ Electronics - Remote control equipment

Card 1/1 Pub. 89 - 22/27

Authors : Kucherov, I., Cand. of Tech. Sc.

Title : Radio controlled rockets

Periodical : Radio 8, 50-53, Aug 1955

Abstract : The characteristics of radio control systems as applied to ground-to-air, air-to-air and air-to-ground missiles are discussed. The technical difficulties involved in interplanetary travel - to the moon and back to earth - are explained. The complexity in controlling the flight of rockets intended for the creation of artificial satellites and delivery of useful loads to such satellites is described. The probable ground and airborne equipment and instruments needed for the guidance of rockets are analyzed. Drawings.

Institution :

Submitted :

SAHAW, A. Maj. Lt. Col., Comm. Tech. Sci.; SAHAW, A. Maj. Lt. Col., Comm. Tech. Sci.
locust

"Self-Guided Missiles," from the book Modern Military Technology, 1956, page 34.

Translation 1114585

KUCHEROV, I.K., kandidat tekhnicheskikh nauk, inzhener-podpolkovnik.

Rocket weapons in aviation. Part 4: Homing missiles. Vest. Vozd.
Fl. 39 no. 4: 57-67 Ap '57. (MLRA 10:9)
(Guided missiles)

KUCHEROV, Ivan Kirillovich; MARISOV, Vladimir Illarionovich; SHORIN,
A.M., polkovnik, red.; MYASNIKOVA, T.F., tekhn.red.

[Guided missiles; according to foreign data] Upravliaemye
snaryady; po inostrannym dannym. Moskva, Voen.izd-vo M-va
obor.SSSR, 1959. 295 p. (MIRA 12:12)
(Guided missiles)

21(0); 1(0); 2(10)

PHASE I BOOK EXPLOITATION

SOV/2210

Atomnaya energiya v aviatsii i raketnoy tekhnike; sbornik statey
(Atomic Energy in Aviation and Rocket Engineering; Collection
of Articles) Moscow, Voen. Izd-vo M-va obor. SSSR, 1959. 500 p.
(Series: Nauchno-populyarnaya biblioteka) No. of copies printed
not given.

Ed. - Compiler: P.T. Astashenkov, Engineer, Lt.-Col; Ed.: Ya.M.
Kader; Tech. Ed.: A.M. Gavrilova.

PURPOSE: This book is intended for officers of the Soviet Armed
Forces, members of DOSAAF, and the general reader interested in
the uses of atomic energy and in the development of aviation and
rocket engineering.

COVERAGE: This collection of 46 articles, compiled by 28 Soviet
scientists and based chiefly on non-Soviet materials, discusses
various aspects of the use of atomic energy in rocketry and avia-
tion. The book surveys the development of atomic and thermonuclear

Card 1/9 ,

Atomic Energy in Aviation (Cont.)

SOV/2210

weapons and weapon carriers, lays down the principles of anti-atomic defense, and evaluates the application of nuclear energy in aviation and rocketry. Fuel and construction materials, as well as actual physical and technological processes involved, are treated briefly. Fundamentals of atomic warfare and combat tactics are discussed at some length. The book is divided into four parts, of which the last consists chiefly of anti-Western propaganda. Section I is devoted to nuclear weapons and their use in aviation. Section II is on anti-atomic defense, especially the defense against radiation. Section III is on the use of nuclear energy in modern aircraft and rocket technology and flight techniques, including some speculations on space travel and on the energy of the future. There are 126 figures and 35 non-Soviet references (some in Russian Translation).

TABLE OF CONTENTS:

From the Publisher

2

Kurchatov, I.V. [Academician]. Achievements in Science and Tech-

Card 2/23

Atomic Energy in Aviation (Cont.)

SOV/2210

nology for the Benefit of Mankind

3

1. NUCLEAR WEAPONS AND THEIR CARRIERS

Pckrovskiy, G.I. [Professor, Doctor of Technical Sciences, General-Major of the Engineer-Technical Service]. Aircraft, Intercontinental Rockets and Other Carriers of Thermonuclear Weapons

9

Kucherov, I. [Engineer-Lt. Colonel], and D. Gladkov [Candidate of Technical Sciences, Engineer-Captain]. Flight Control in Intercontinental Rockets

37

Glukhov, V. [Candidate of Technical Sciences, Engineer-Lt. Colonel]. Types of Rocket Weapons

42

Galin, P. [Engineer -Lt. Colonel]. Aircraft and Rockets as Carriers of Tactical Nuclear Weapons

48

Petrov, A. [Engineer-Lt. Colonel]. Guided Missiles With an Atomic Charge in Aviation and Anti-aircraft Defense

78

Card 3/ 23

KUCHEROV, I.K.; SOLINOV, V.I.; STEPANOV, P.A.

Devices for the setting and sharpening of cutters on the
machinery. Der. prom. 14 no.9:28-29 S '65. (Link 18:12)

FISHBEYN, S.S., inzh.; KUCHEROV, I.M., inzh.; SAZHIN, B.S., inzh.;
FOKIN, I.F., inzh.

Results of the industrial adoption of a combined aero-
fountain dryer. Khim. i nef. mashinostr. no. 3:7-9 S '64.
(MIRA 17:12)

KUCHEROV, I.P.

New data on the cartography of the Antarctic. Vest. AN SSSR
26 no.9:36-40 S '56. (MLRA 9:11)
(Antarctic regions--Maps)

KUCHEROV, I.P.

Soviet nautical charts of Antarctica. Inform.biul.Sov.antark.eksp.
no.31:48-50 '61. (MIRA 15:4)

1. Nachal'nik Tsentral'nogo kartograficheskogo proizvodstva
Voyenno-morskogo flota.
(Antarctic regions--Nautical charts)

S/026/62/000/005/005/010
D036/D113

AUTHORS: Kuchеров, I.P., and Bogdanov, K.A. (Leningrad)

TITLE: A witness to a heroic scientific exploit

PERIODICAL: Priroda, no. 5, 1962, 89-91

TEXT: A handwritten map of Bellingshausen's Antarctic voyage of 1819-21, has established that the Antarctic continent was discovered by him on January 16, 1820. He did not publish the chart as he assumed that, as it was purely navigational, it would hold no scientific interest, and did not publicize his discovery as at that time the continent was held to be a vast expanse of dry land, and not ice as Bellingshausen saw it. More detailed information on this map is to be found in the articles by S.D. Osokin and I.M. Belov in "Krasnaya Zvezda" (September 24, 1961,) and "Vodnyy Transport" (November 21, 1961) respectively.

Card 1/1

UDINTSEV, G.B.; AGAPOVA, G.V.; BERSENEV, A.F.; BUDANOVA, L.Yu.; ZATONSKIY,
L.K.; ZENKEVICH, N.L.; IVANOV, A.G.; KANAYEV, V.F.; KUCHEROV, I.P.;
LARINA, N.I.; MAROVA, N.A.; MINEYEV, V.A.; RAUTSKIY, Ye.I.

New relief maps of the bottom of the Pacific Ocean. Geofiz. biul.
no.14:159-167 '64. (MIRA 18:4)

KUCHEROV, I. S.

"Study of the Rhythmic Growth and Gas Metabolism of Rabbits."
Cand Biol Sci, Kiev State U imeni T. G. Shevchenko, Min Higher
Education USSR, Kiev, 1954. (KL, No 8, Feb 55)

SO: Sum. No. 631, 26 Aug 55-Survey of Scientific and Technical
Dissortations Defended at USSR Higher Educational Institu-
tions (14).

KUCHEROV, I.Ya. [Kuchеров, I.IA.]; FAYDISH, A.M. [Faidysh, O.M.]

Temperature dependence of luminescence quantum yields of condensed hydrocarbon solid solutions. Nauk povid. KDU no.1:22 '56.

(MIRA 11:4)

(Anthracene) (Luminescence) (Naphthacene)

KUCHEROV, I.Ya. [Kucherov, I.IA.] ; FAYDISH A.W. [Faidysh, C.W.]
Tsenenko, Z.M.

Change in the intensity distribution of the luminescence spectra of
anthracene and naphthacene. Nauk povid. KDU no.1:23-24 '56.

(MIRA 11:4)

(Anthracene--Spectra)
(Naphthacene--Spectra)
(Luminescence)

AGRANOVICH, V.M.; KUCHEROV, I.IA. [Kucherov, I.IA.]; PAYDISH, A.N. [Faidysh O.N.]

Diffusion displacement length of excitons in anthracene crystals.
Nauk povid. KDU no.1:25-27 '56. (MIRA 11:4)
(Anthracene) (Excitons)

Category: USSR/Optics - Physical optics

K-5

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 2354

Author : Kucherov, I.Ya., Faydush, O.M.

Inst : Kiev University, USSR

Title : Electron-Excitation Energy Transfer in Solid Organic Crystals

Orig Pub : Dopovidi AN URSR, 1956, No 1, 57-61

Abstract : An investigation is made of the concentration dependence of the quantum yields of luminescence of the basic substance and of an admixture of solid powder-like solutions of naphthacene in anthracene (C from 2×10^{-4} to 6×10^{-4}) and of anthracene in naphthalene (C from 10^{-4} to 10^{-14}) for two sizes of crystals (approximately 0.5 mm and 1 micron). To eliminate photochemical oxidation, the measurements were performed in vacuum. The glow was recorded photoelectrically. The observed regularities are interpreted on the basis of an assumed exciton mechanism of energy transfer in solid organic solutions. The increase in the admixture concentration reduces the average lifetime of the exciton, thereby reducing the attenuation time and the temperature quenching of the glow of the basic substance. Reducing the crystal dimensions causes a reduced energy transfer from the basic substance to the impurity, and this is explained by the reduced mean free path of the electron and by the reduced glow reabsorption, which, like the absorption of the exciting radiation, leads to the creation

Card : 1/2

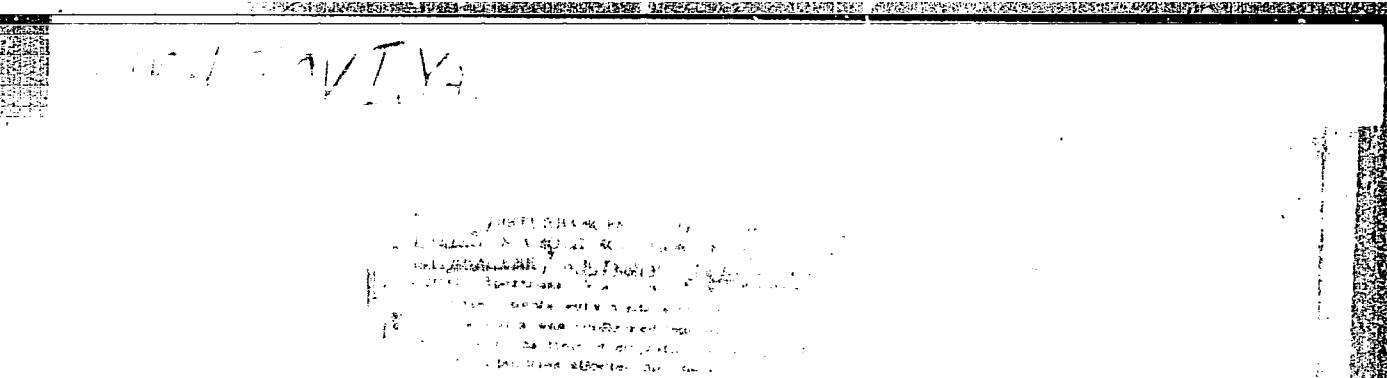
Category : USSR/Optics - Physical optics

K-5

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 2354

of the excitons. The concentration dependence of the quantum yields of the luminescence of the impurity and for the basic substance, calculated by the authors, on the assumption that the exciton motion has a diffusion character, for the naphthalene-anthracene pair is in satisfactory agreement with the experimental data.

Card : 2/2



"APPROVED FOR RELEASE: 03/13/2001

CIA-RDP86-00513R000827030010-0

APPROVED FOR RELEASE: 03/13/2001

CIA-RDP86-00513R000827030010-0"

KUCHEROV, I. Ya. Cand Phys-Math Sci -- (diss) "Transfer of electronic- excitation energy in crystals of anthracene and naphthalene." Kiev, 1957. 10 pp 22 cm.
(Min of Higher Education UkrSSR. Kiev State ^{Univ} Im T. G. Shevchenko), 100 copies
(KL, 24-57, 115)

FAYDYSH, A.M.; KUCHEROV, I.Ya.

Migration and energy transfer of the electron excitation in anthracene and naphthalene crystals. Fiz. sbor. no.3:40-41 '57.
(MIRA 11:8)

1. Kiyevskiy gosudarstvennyy universitet im. T.G. Shevchenko.
(Anthracene) (Naphthalene) (Luminescence)

Kucherov, I. Ya.
USSR/Physcial Chemistry - Crystals.

B-5

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 3674.

Author : V.M. Agranovich, I. Ya. Kucherov, O.M. Paydish.

Inst : Kiev State Univ

Title : Diffusion Shift Length of Exitons in Anthracene Crystals.

Orig Pub: Ukr. fiz. zh., 1957, 2, No 1, 61-67.

Abstract: Continuing the previously published studies (RZhKhim, 1956, 57373), the dependence of the relative luminescence quantum yields B of solid naphthacene (I) solutions in anthracene (II) in the I concentration in the range from 1.5×10^{-6} to 4.7×10^{-6} mole per mole and at the excitation with $\lambda = 365 \text{ m}\mu$ was investigated. B of pure II was assumed to be 1. Within the above mentioned range, B_{II} changes from 0.84 to 0.04, and B_I changes from 0.08 to 0.715. Also the dependence of B on light absorption factor k for $\lambda = 313, 366$ and $405 \text{ m}\mu$ was investigated. B_{II} rises with the rise of k , but B_I drops.

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Card : 1/2

USSR/Physcial Chemistry - Crystals.

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 3674

APPROVED FOR RELEASE: 03/13/2001

CIA-RDP86-00513R000827030010-0

B-5

Theoretical equations of the dependence of B_I and B_{II} on the I concentration and k were deducted by the solution of the exciton diffusion equation $D(d^2x/dx^2) + \bar{\Phi}_0 \exp(-kx) - fp = 0$, where $f(x)$ is the exciton concentration, D is the diffusion factor, $\bar{\Phi}_0$ is the number of electrons excited in 1 cub. cm in 1 sec at $x = 0$, and p is the probability of exciton disappearance in 1 sec in the result of de-excitation in II molecules, capture in I and extinction. The theory agrees satisfactorily with experiments. It was found from the same equations that the observed dependence of B length in I was about 0.15 μ . The observed dependence of B and B_{II} on k is explained by that the depth of exciton formation decreases with the rise of k , i.e., the probability of their arrival at the surface, where they are quenched chiefly in II molecules, rises together with k .

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Card : 2/2

USSR/Physical Chemistry - Crystals

Abs Jour : Ref Zhur - Khimiya, No 1, 1958, 237

B-5

energy transmission from I to II at low temperatures. At the excitation by λ of 436 m μ (region, in which I does not absorb) B_{II} rises monotonously at cooling. The maximum B_{II} is at about -40° and the excitation by λ of 365 m μ . The drop of B_{II} at the heating above -40° and cooling below -40° is attributed to the temperature quenching in molecules and to the decrease of the efficiency of the energy transmission from I to II correspondingly. The same regularity is qualitatively observed in case of crystals of naphthalene with an admixture of I.

Card 2/2

KUCHEROV, I.YA.

AUTHORS: Kucherov, I.Ya., Faydysh, A.N. and Fesenko, Z.N. 51-4-9-25

TITLE: Variations of the intensity distribution in the luminescence spectra of anthracene and naphthalene.
(Izmeneniya raspredeleniya intensivnosti v spektrakh lyuminesentsii antratsena i naftalina.)

PERIODICAL: "Optika i Spektroskopiya" (Optics and Spectroscopy) 1957, Vol.2, No.4, pp.462-469 (U.S.S.R.)

ABSTRACT: Variations in the intensity distribution in the luminescence spectra of anthracene and naphthalene on variation of crystal size and temperature and on introduction of impurities are reported. These variations are related to efficiency of energy transfer between base and impurity. All samples were prepared by melting or sublimation in vacuo. For tests the samples were held in evacuated vessels. For low-temperature tests carbon dioxide and liquid oxygen were used. The conditions of experiments were chosen to make the blackening of the records occur in the linear range of the photographic plate characteristic. In photometric measurements of the recorded spectra spectral sensitivity of plates and absorption in the spectrograph used were allowed for. Quantum intensities ($I/h\nu$) were calculated and from the areas under the quantum intensity curves, quantum yields were found.

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Variations of the intensity distribution in the luminescence spectra of anthracene and naphthalene. (Cont.) 51-4-9/25

Anthracene. Luminescence of anthracene consists of 5 bands. It was excited at $366\text{ m}\mu$ and the effect of crystal size (0.5 mm, 30, 10, 3, 1.5 and 0.3μ thickness) on emission was studied. Emission was measured from that surface of the crystal which was earlier excited (for 0.5 mm crystals it was measured also from the opposite surface). It was found that at 20°C decrease of size caused strengthening of the shorter wavelength region of emission, weakening of the longer wavelengths, and a slight displacement of maxima. Lowering of temperature to -140°C caused considerable intensity redistribution (similar to that described above) in thick (0.5 mm) samples and much smaller redistribution in thin (0.3μ) samples. Heating to $+70^{\circ}\text{C}$ produced increased re-absorption. Re-absorption increases also due to reflection at the crystal surfaces (shown by coating crystals with glycerine). Variation of excitation wavelength (254, 366, $405\text{ m}\mu$) did not affect luminescence of the 0.5 mm crystals. In contrast to earlier work (J.B.Birks and G.T.Wright, Proc. Phys. Soc. B, Vol.67, 657, 1954) no $390\text{ m}\mu$ band was found on excitation with $254\text{ m}\mu$. Addition of 1% of naphthalene or of naphthacene

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51-4-9/25

Variations of the intensity distribution in the luminescence spectra of anthracene and naphthalene. (Cont.)

did not affect luminescence of anthracene at 20°C, but at -140°C naphthalene impurity had a large effect.

Naphthalene. 1.5 mm and 15 μ thick crystals were used and the effects of size were analogous to those for anthracene. On lowering of temperature the vibrational structure of luminescence could be more clearly seen. Addition of anthracene to naphthalene does not affect its luminescence at room temperature. At -140°C large concentrations of anthracene in naphthalene produce strengthening of the shorter wavelengths by re-absorption of anthracene luminescence.

Discussion. Only anthracene is considered (naphthalene behaviour is qualitatively similar). Redistribution of the intensity with change of size and with lowering of temperature is due mainly to re-absorption. Technical quantum yield for 0.5 mm thick anthracene at 20°C is 0.65-0.70 compared with molecular values of 0.9-1.0, but for 1.5 μ and 0.3 μ samples technical and molecular values are approximately the same (in thin samples re-absorption is small). Addition of naphthalene to

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Variations of the intensity distribution in the luminescence spectra of anthracene and naphthalene. (Cont.) 51-4-9/25

anthracene decreases the latter's quantum yield and produces strong naphthacene emission. The transfer of energy from anthracene to naphthacene occurs by an exciton mechanism. The rapid fall of the energy transfer efficiency with decrease of crystal size below 1μ is due to limitation of the exciton paths. There are five figures and fourteen references (six of which are Slavic).

SUBMITTED: July 17, 1956.

AVAILABLE: Library of Congress

Card 4/4

KUCHEROV, I. YA.

4C-1-7/20

AUTHORS: Kuchorov, I. Ya. , Faydysh, A. N.

TITLE: Migration and Transfer of Energy of an Electron-Excitation in Anthracene- and Naphthalene-Crystals (Migratsiya i peredacha energii elektronnoy vzbuzhdeniya v kristallakh antratsena i naftalina)

PERIODICAL: Izvestiya AN SSSR Seriya Fizicheskaya, 1958, Vol. 22, Nr 1, pp. 29 - 35 (USSR)

ABSTRACT: In the laboratory of the authors the transfer of energy under various conditions in anthracene-crystals with an addition of naphthalene and in naphthalene-crystals with an addition of anthracene in the case of photoexcitation was investigated. All samples investigated were produced by melting pure substances in a vacuum. Measuring the intensity of luminescence was carried out in a photoelectric apparatus with an electrometric amplifier. In most cases investigations were carried out in the case of full absorption and under equal geometrical conditions. In this manner it was possible to determine the relative quantum yield according to the measured intensities of luminescence. With respect to the dependence of the quantum yield in the luminescence on

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48-1-7/20

Migration and Transfer of Energy of an Electron-Excitation in Anthracene- and Naphthalene-Crystals

the concentration it is shown that the introduction of naphthalene into the anthracene-crystal and of anthracene into the naphthalene-crystal leads to a great reduction of the quantum yield and to the intensification of the luminescence of the addition. The quantum yield of the basic substance and additions become equal at a naphthalene-concentration of $2 \cdot 10^{-5}$ Mol Mol⁻¹. The calculation made by the authors shows that with this concentration at the expense of the absorption of the anthracene-luminescence by naphthalene not more than 1 ÷ 2 % of the total excitation-energy of the anthracene-molecules can be transferred. Consequently, the observed effective transfer of energy from anthracene to naphthalene is practically entirely caused by the migration of the excitons in the anthracene-crystal and their capture by the naphthalene-molecules. It is shown that in the naphthalene-anthracene-pair the quantum yield of the basic substance and the addition becomes equal at an anthracene-concentration of $4,3 \cdot 10^{-5}$ Mol Mol⁻¹. In the investigation of the influence of the crystal-dimensions upon the efficacy of the transfer of energy the efficacy of the transfer of energy in the transition from thick crystals to thin films was investigated at room temperature and an excitation of 365 mμ it became evi-

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48-1-7/20
Migration and Transfer of Energy of an Electron-Excitation in Anthracene- and Naphthalene-Crystals

dent that at a naphthacene-concentration of about $2 \cdot 10^{-4}$ Mol Mol $^{-1}$ a reduction of the crystal-thickness from 200 to 1 μ leads approximately to a threefold decrease in the quantum-yield relation of naphthacene to that of anthracene (B_N/B_A) and in the transition from 1 μ to 0,2 μ - to a 3-3,5 fold decrease. This difference in the decrease indicates the occurrence of two different causes which influence the efficacy of the transfer of energy. It is shown that in the first case (from thick crystals to films with 1 μ) the decrease is mainly due to the decrease in reabsorption. The part played by the reabsorption consists in the fact that a part of the excitons which underwent an extinction in the basic molecules are again restored due to the absorption of short-wave photons. In this manner the reabsorption leads to an increase in the effective life of the excitons and correspondingly also to an increase in the time of extinction for the luminescence. In the second case (films under 1 μ) the limitation of the exciton-passage represents the cause of the great decrease in B_N/B_A . When film-thickness is reduced, a larger number of excitons will always come to the front

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40-1-7/20

Migration and Transfer of Energy of an Electron-Excitation in Anthracene- and Naphthalene-Crystals

and rear surfaces, where they will mainly illuminate in the base-molecules. The latter must lead to an increase in the quantum yield in the base and to a corresponding decrease in the addition. It is just this effect that was determined by the authors. It is further shown that the introduction of a second addition into the crystal reduces the effective life of the exciton, which is also confirmed in references 18 and 6 by direct experiments. The dependence of the quantum yield in the base and addition on temperature and a calculation of the dependence of the quantum yield on the addition-concentration and on the absorption-coefficient of the exciting light are given. The reabsorption and the possibility of the occurrence of two types of excitons were not taken into account in the calculation. The theory taking these conditions into account was given in references 24, 25. There are 4 figures, 2 tables, and 25 references, 16 of which are Slavic.

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48-1-7/20
Migration and Transfer of Energy of an Electron-Excitation in Anthracene- and
Naphthalene-Crystals

ASSOCIATION: Kiyev State University I. M. P. G. Shevchenko
(Kievskiy gos. universitet im. T. G. Shevchenko)

AVAILABLE: Library of Congress

1. Chemistry 2. Crystals-Excitation 3. Crystals-Energy

Card 5/5

S/058/63/000/003/037/104
A062/A101

AUTHOR: Kucharov, I. Ya.

TITLE: Photoluminescence of mixed organic crystals

PERIODICAL: Referativnyy zhurnal, Fizika, no. 3, 1963, 62, abstract 3D421
("Nauk. zap. Kyiys'k. un-t", 1959, v. 18, no. 3, 51 - 62, Ukrainian
summary in Russian)

TEXT: An investigation was made on the influence of the following factors: the width of crystals, the concentration of an optically inactive admixture, the absorption coefficient of the exciting light and the temperature, on the efficiency of energy transfer of electron excitation in mixed crystals of naphthalene with anthracene and of anthracene with acenaphthene. It is established that a reduction of the width of the crystals, an addition of the optically inactive admixture, an increase of the absorption coefficient of the exciting light and a reduction of the temperature, reduce the efficiency of the transfer of the excitation energy from the principal substance to the admixture. The obtained experimental data are discussed on the basis of considerations on the exciton char-

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Photoluminescence of mixed organic crystals

S/058/63/000/003/037/104
A062/A101

acter of the excitation energy transfer. There are 22 references.

[Abstracter's note: Complete translation]

Card 2/2

51950
S/181/62/004/005/052/055
B163/B138

26-5450
9.4.177

AUTHORS:

Kucherov, I. Ya., Zhmudskiy, A. B., and Shiyancovskiy, V. I.

TITLE:

Some special features of the dark conductivity of CdS photoresistors

PERIODICAL: Fizika tverdogo tela, v. 4, no. 5, 1962, 1376-1378

TEXT: A slow increase in current with time is observed in some CdS photoresistors with gallium electrodes produced by the Institut fiziki AN USSR (Institute of Physics AS UkrSSR). This slow increase is especially noticeable with specimens of relatively low resistance. Fig. 1 shows the variation in current with time for one specimen under different voltages. If the voltage is cut off for a short time and switched on again, the current is quickly restored to the original value. On the other hand, if the voltage is cut off for about 30 hours or more, the current time variation will have the original shape, as shown in Fig. 1. Similar effects have been found before with Sb_2S_3 single crystals, by Lyashenko and Skubenko (UFZh. 6, 2, 1961, 202). The increase in current with time can

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S/181/62/004/005/052/055
B163/B138

Some special features of the ...

be considerably delayed by passing a current through the photoresistor in opposite direction. If, beforehand, a sufficient time (e.g. 36 hours) has elapsed after the passage of the inverse current, this effect is no longer observed. From these results it is concluded that the rise in current with time is due to slow diffusion processes at the surface or inside the semiconductor. The explanation given by Lyashenko and Skubenko (l.c.), that the carrier concentration is increased with time due to electrolysis of their trapping centers, is not thought to be sufficient to explain the rapid increase in current observed in the CdS photoresistors. It is thought that ions from impurities and adsorbed gas, diffusing in the applied field, create a space charge and potential drop at the electrodes. In this local strong field electrons may be set free from traps occupied at room temperature, and electron multiplication may also be caused by impact ionization. The delay effect of inverse current is attributed to positive ions concentrating near the cathode, and emptying the trap levels. Thus, if the applied field is reversed, it will take some time before the ions are removed and the traps filled again. There are 2 figures.

ASSOCIATION: Kiyevskiy gosudarstvennyy universitet im. T. G. Shevchenko
(Kiyev State University imeni T. G. Shevchenko)

Card 2/4

Some special features of the ...

SUBMITTED:

October 26, 1961 (initially),
February 10, 1962 (after revision)

S/181/62/004/005/052/055
B163/B138

Fig. 1. Variation in dark current with time for different voltages applied to a CdS photoresistor. 1 - $V = 1.4$ v ($E = 14$ v/cm), 2 - 2.6 v, 3 - 5.4 v, 4 - 10.2 v, 5 - 15.5 v. Abscissa: Time in minutes. Ordinate: Current, in 10^{-12} amps.

Card 3/4

ZHMUDSKIY, A.Z.; KUCHEROV, I.Ya.; SHIYANOVSKIY, V.I.

Recording of X rays with the aid of CdS photoresistance. Zav.lab.
28 no.2:232-233 '62. (MIRA 15:3)

1. Kiyevskiy gosudarstvennyy universitet imeni T.G.Shevchenko.
(X rays) (Cadmium sulfide)

L 1114-66 EWT(1)/T IJP(c) GG/GS

ACCESSION NR: AT5020493

UR/0000/64/000/000/0463/0468, 76

AUTHORS: Kucherov, I. Ya.; Zhmudskiy, A. Z.; Shiyanovskiy, V. I.

TITLE: Increase in electrical conductivity under the influence of an electric field in CdS single crystals

SOURCE: Mezhevuzovskaya nauchno-tekhnicheskaya konferentsiya po fizike poluprovodnikov (poverkhnostnyye i kontaktnyye yavleniya). Tomsk, 1962. Poverkhnostnyye i kontaktnyye yavleniya v poluprovodnikakh (Surface and contact phenomena in semiconductors). Tomsk, Izd-vo Tomskogo univ., 1964, 463-468

TOPIC TAGS: cadmium sulfide, electric conductivity, single crystal, annealing, electrometer, illumination effect

ABSTRACT: Transient processes of electrical conductivity in CdS single crystals and the effect of annealing and illumination on these crystals were studied in order to determine the causes of these transients. About 40 CdS single crystals with a dark resistance of 10^{12} - $10^{14} \Omega$ were studied with the aid of an electrometer amplifier. The change in current with time is shown in Fig. 1 on the Enclosure. The presence of a threshold potential difference at which a slow increase in current with time is observed and a strong dependence of resistivity upon

Card 1/3

L 1114-66

ACCESSION NR: AT5020493

voltage are shown. Orig. art. has: 3 graphs and 1 formula.

ASSOCIATION: Kiyevskiy ordena Lenina gosuniversitet im. T. G. Shevchenko (Kiev
Order of Lenin State University)

SUBMITTED: 06Oct64

ENCL: 01

SUB CODE: 'SS, EM

NO REF SOV: 004

OTHER: 000

Cord 2/3

L 1114-66

ACCESSION NR: AT5020493

ENCLOSURE: 01

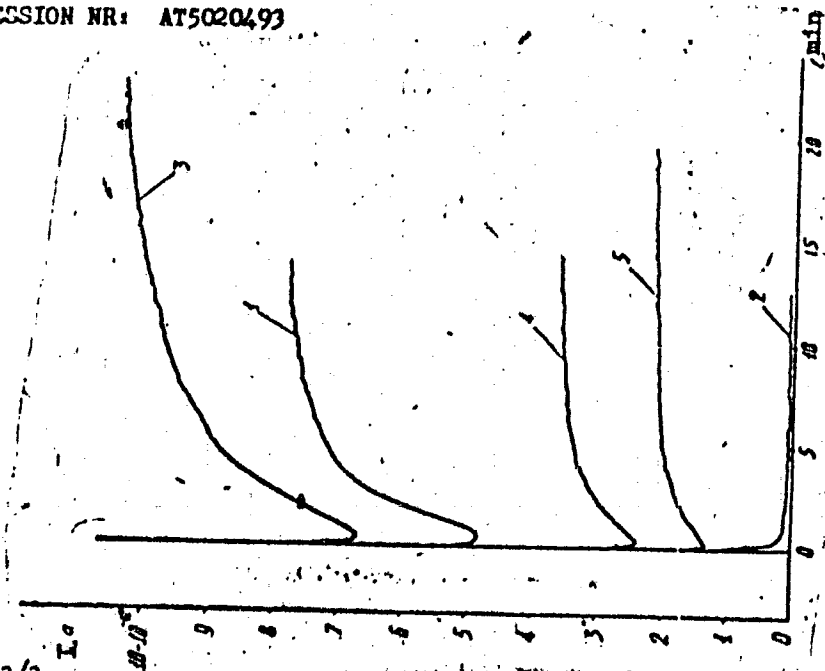


Fig. 1. Change in current with time.

Curve 1- before annealing; curve 2- after 4-5 hrs annealing at 100C; curve 3- 18 hrs after illumination of annealed sample; curve 4- 63 hrs after illumination; curve 5- 113 hrs after illumination

Card 3/3
KC

L 44133-66 INT(1)/INT(2)/INT(3)/INT(4) 101101 00

ACC NR: AP6022907

SOURCE CODE: UR/0185/66/011/004/0389/0394

AUTHOR: Zhmuds' kyy, O. Z. — Zhmudskiy, A. Z.; Kucherov, I. Ya.;
Shyyanovs' kyy, V. I. — Shiyanovskiy, V. I.

ORG: Kiev State University im. T. G. Shevchenko (Kyyivs' sky derzhuniversytet)

TITLE: Investigation of slow changes in the dark conductivity of cadmium sulfide single crystals

SOURCE: Ukrayins' kyy fizychnyy zhurnal, v. 11, no. 4, 1966, 389-394

TOPIC TAGS: crystal surface, electric field, conductivity, electrode, cadmium sulfide, single crystal, dark conductivity

ABSTRACT: An investigation has been carried out on the effect of various contacts (Al, Au, In, and In—Ga alloys), the value of the voltage (V) applied to the sample, and of the transverse electric field on the kinetics of dark conductivity of CdS single crystals. It is shown that slowly increasing relaxation of the conductivity is observ-

Card 1/2

L 44183-66

ACC NR: AP6022907

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ed only in samples with In and In—Ga electrodes. Voltage and the electric field have a great effect on the kinetics of dark conductivity. The increase of voltage to a certain value results in a decrease in τ of the process; with a further increase of voltage V , the conductivity decreases, which can be described by an equation of the form $I = A + B \ln t$, typical of many surface effects in semiconductors. The view is discussed that a slow increase in the dark conductivity with time at $V = \text{const}$ is due to the redistribution of electrons injected into the crystal between the bulk and the surface. Orig. art. has: 5 figures, 4 formulas, and 1 table. [Based on authors' abstract]

[NT]

SUB CODE: 20/ SUBM DATE: 24Sep65/ ORIG REF: 008/ OTH REF: 005/
///

Card 2/2

44184-66 EWT(1)/EWT(2)/T/WT(1)/ETI LJP(6) JD/33

ACC NR: AP6022996

SOURCE CODE: UR/0185/66/011/004/0383/0388 63
B

AUTHOR: Dubovoy, V. K. ; Kucherov, I. Ya. ; Shyyanovs' kyy, V. I.

ORG: Kiev State University Im. I. G. Shevchenko (Kyyivs' kyy derzhuniversity)

TITLE: Investigation of certain electrical properties on the surface of cadmium sulfide single crystals 4

SOURCE: Ukrayins' kyy fizychnyy zhurnal, v. 11, no. 4, 1966, 383-388

TOPIC TAGS: molecular crystal, crystal surface, electric field, electrode, cadmium sulfide, single crystal 2

ABSTRACT: The effects of the natural atmosphere, dry air, O₂, H₂O vapor, CO₂, and a transverse electric field on the conductivity of CdS single crystals with ohmic In-Ga electrodes have been investigated. In the case of sample I. dry air, O₂, and CO₂ vapor have practically no effect on the conductivity, while under the effect of the

Card 1/2

I 44134-66

ACC NR: AP6022996

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natural atmosphere and H_2O vapor the conductivity is increased. In the case of sample II, the natural atmosphere, dry air, and O_2 vapor greatly decrease the conductivity, while H_2O vapor has a lesser effect, and CO_2 only slightly decreases the conductivity. The electric field has an effect on the conductivity in crystals of sample I only in a humid atmosphere, while in crystals of sample II, the conductivity was affected in all the gas media and in a vacuum of $\sim 10^{-5}$ mm Hg. The electric-field sign corresponded to the electronic nature of the surface conductivity in all cases. The conclusion is drawn that the initial surface bend in samples I and II differs in sign (antisuppression in II), which may be due to the deviation from a stoichiometric composition. It is assumed that H_2O molecules on the surface of crystals I create a capture center for holes, and on the surface of crystals II — for electrons. Orig. art. has: 4 figures and 1 formula. [Based on authors' abstract]

[NT]

SUB CODE: 20/ SUBM DATE: 24Sep65/ ORIG REF: 014/ OTH REF: 008/
///alum
Card 2/2

KUCHEROV, L.A.

Apparatus for wasteless slaking of lime. Vod. i san. tekhn. no. 5:33-34
My. '61. (MIRA 14:6)

(Lime)

KUCHEROV, L.T., elektromekhanik

Device for cleaning commutator bars. Avtom., telemek. i svyaz' 6
no.8:32 Ag '62. (MIRA 15:8)

1. Lozovskaya distantziya signalizatsii i svyazi Yuzhnoy dorogi.
(Telephone---Equipment and supplies)